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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,167	01/02/2001	J. Richard Aylward	02103-369001 / AABOSS12	9696
26162	7590	03/11/2005	EXAMINER	
FISH & RICHARDSON PC 225 FRANKLIN ST BOSTON, MA 02110			MICHALSKI, JUSTIN I	
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			2644	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/753,167	Applicant(s) AYLWARD, J. RICHARD	
	Examiner Justin Michalski	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 4,9,12,13,18,19,22-24 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10,11,14-17,20,21,25,26 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1/28/04, 10/28/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of species I in the reply filed on 27 September 2004 is acknowledged.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 6, 8, 10, 11, 14-17, 20, 21, 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazuyoshi et al. ("Kazuyoshi") (JP 2-11941) Translation submitted with IDS on 28 January 2004.

Regarding Claim 1, Kazuyoshi discloses an electroacoustic waveguide system, comprising: an acoustic waveguide (Fig. 3) having an open end (right side of waveguide) and an interior; a first acoustic driver (Fig. 3e, driver at left end) connected to said acoustic waveguide having a first radiating surface (radiating into wave guide) and a second radiating surface (backside or driver radiating outside or waveguide), constructed and arranged so that said first radiating surface radiates sound waves into free air and said second radiating surface radiates sound waves into said acoustic waveguide so that sound waves are radiated at said open end (right side or waveguide); and a source of opposing sound waves in said acoustic waveguide (driver on bottom

wall of waveguide) for opposing a predetermined spectral component of said sound waves radiated into said acoustic waveguide to oppose the acoustic radiation of said predetermined spectral component from said acoustic waveguide (Kazuyoshi discloses second driver cancels the 3<sup>rd</sup> order resonance frequency; Page 4, paragraphs 2-6).

Regarding Claim 2, Kazuyoshi further discloses an acoustic port, coupling said interior with free air (Fig. 3, right end of waveguide).

Regarding Claim 3, Kazuyoshi further discloses said predetermined spectral component comprises the opposition frequency (Kazuyoshi discloses 3<sup>rd</sup> order resonance frequency cancellation; Page 4, paragraphs 2-6; Fig. 3c).

Regarding Claim 5, Kazuyoshi further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound waves into said acoustic waveguide (Fig. 3e, driver attached to bottom side of waveguide).

Regarding Claim 6, Kazuyoshi further discloses an acoustic port, coupling said interior with free air (Fig. 3, right end of waveguide).

Regarding Claim 8, Kazuyoshi further discloses predetermined spectral component comprises a dip frequency at which said waveguide system produces an acoustic null, absent said source of opposing sound waves (Kazuyoshi discloses canceling 3<sup>rd</sup> order resonance frequency, i.e. acoustic null, Page 4, paragraphs 2-6).

Regarding Claim 10, Kazuyoshi further discloses said source or opposing sound waves comprises a second acoustic driver arranged and constructed to radiate sound

waves into said acoustic waveguide (Fig. 3e, driver attached to bottom side of waveguide).

Regarding Claim 11, Kazuyoshi discloses an electroacoustic waveguide system, comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and further having an effective length; an acoustic driver for radiating sound waves into said waveguide, positioned in said acoustic waveguide so that there is an acoustic null at said open end at a dip frequency (Kazuyoshi discloses positioning driver at  $2/3$  to cancel the 3<sup>rd</sup> order resonance frequency, i.e. dip frequency, Page 4, paragraphs 2-6).

Regarding Claim 14, Kazuyoshi discloses an electroacoustic waveguide system comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and a wall connecting said open end and said closed end; a plurality of acoustic drivers, each having a first radiating surface and a second radiating surface; wherein a first of said acoustic drivers is placed in said wall of said acoustic waveguide (driver on bottom side of waveguide, Fig. 3e) so that said first radiating surface of said first acoustic driver radiates into said acoustic waveguide and said second radiating surface of said first acoustic driver radiates into free air.

Regarding Claim 15, Kazuyoshi further discloses a second of said acoustic drivers is positioned in said closed end of said acoustic waveguide (left end of waveguide).

Regarding Claim 16, Kazuyoshi further discloses a second of said plurality of acoustic drivers is placed in said wall of said acoustic waveguide so that said first radiating surface of said second driver radiates into said acoustic waveguide and said second radiating surface of said second acoustic driver radiates into free air (Fig. 6).

Regarding Claim 17, Kazuyoshi further discloses combining radiation of said plurality of acoustic drivers to produce an acoustic null at the open end of said waveguide at a dip frequency (Kazuyoshi discloses second driver cancels the 3<sup>rd</sup> order resonance frequency; Page 4, paragraphs 2-6).

Regarding Claim 20, Kazuyoshi discloses an electroacoustic waveguide system comprising: an acoustic waveguide (Fig. 3) having an open end (right end of waveguide) and a closed end (left end of waveguide) and an effective midpoint; a plurality of acoustic drivers; and an acoustic compliance acoustically coupling a first of said plurality of acoustic drivers and said acoustic waveguide (it is inherent that air within the waveguide will provide an acoustic compliance).

Regarding Claim 21, Kazuyoshi further discloses a first of said plurality of acoustic drivers is positioned at approximately said effective midpoint (Fig. 4).

Regarding Claim 25, Kazuyoshi discloses a method for operating an acoustic waveguide (Fig. 3) having an open end (right side of waveguide) and a closed end (left end of waveguide) and a wall connecting said open end and said closed end, comprising, radiating acoustic energy into said acoustic waveguide (driver at left end of waveguide); and significantly opposing acoustic radiation at a predetermined dip

frequency (Kazuyoshi discloses canceling 3<sup>rd</sup> order resonance frequency, Page 4, paragraphs 2-6).

Regarding Claim 26, Kazuyoshi further discloses opposing acoustic radiation comprises providing opposing acoustic radiation in said acoustic waveguide (Fig. 3c; Page 4, paragraphs 2-6).

Regarding Claim 28, Kazuyoshi further discloses an opposing acoustic radiation comprises radiating, by a second acoustic driver (driver on bottom wall of waveguide), said opposing acoustic energy into said acoustic waveguide (Kazuyoshi discloses second driver cancels the 3<sup>rd</sup> order resonance frequency; Page 4, paragraphs 2-6).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kazuyoshi as applied to claim 6 above in view of Edgar (US Patent 5,588,063).

Kazuyoshi discloses a system as stated apropos of claim 6 above including a closed end (left end of waveguide). Kazuyoshi does not disclose an acoustic port positioned between said first acoustic drive and said closed end of said acoustic waveguide. Edgar discloses a waveguide system including acoustic ports (Fig. 4, ports

52) in order to improve the directionality of the speaker system (Col. 5, lines 60-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include acoustic ports to improve the directionality of the speaker system as taught by Edgar.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-3, 5-8, 10, 11, 14-17, 20, 21, 25, 26, and 28 have been considered but are moot in view of the new ground(s) of rejection.


### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703)305-4040. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM

  
**SINH TRAN**  
**SUPERVISORY PATENT EXAMINER**